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thermometer attached to the barometer and by the free thermometer exposed to the outer air. Hence the cause of the deviation was not to be looked for in the effect of temperature on the foundations or on the massive transit piers, but on smaller parts more readily affected, such as the metallic mounting. These were accordingly examined. In the azimuthal Y, the construction was found to be much as usual, but the artist has adopted an adjustment for the vertical Y, which seems liable to suspicion. There are two vertical screws applied from below; one, pushing, on the north side of the middle, and the other, pulling, at the south side. The Y is prevented from turning in a vertical plane by jamming horizontal screws, which press a plate against the north face of the Y so as to bring the whole tightly against a stopping-piece, which blocks the south face. Professor Smyth's present opinion is, that the effect of expansion on the two screws, which are in contrary states of constraint, is to alter the adjustment; certainly the arrangement looks unmechanical. In the ordinary mode of construction, in this country at least, the elevating Y is either raised by one central screw, or by two screws, one on each side of the centre; in which case a drawing-screw may be placed at the centre. There is thus no tendency to twist, and the side-plates which confine the Y laterally have to exert little restraining force. Professor Smyth has communicated with MM. Repsold, the makers of this magnificent instrument, and is awaiting their reply before adopting any remedy.*

Extract of a Letter from Mr. Lassell.

On July 8, about 1^{h} 45^{m} A.M., the planet *Neptune* was seen with three stars in the field of the micrometer: *a*, a star of the 10th magnitude; *b*, a star of the 12th; and *c*, smaller still, but indisputably visible. This *c* is probably a satellite. The star *a* precedes *b* about $11^{s}\cdot 2$, and is to the south of *b*. The angle which the line joining *a* and *b* makes with the parallel of daily motion is $32^{\circ}\cdot 35$. *Neptune* was to the south of *b*, and somewhat following. The distance by estimation from *b* was 3 diameters, and the line joining *a* and *Neptune* made an angle of $28^{\circ}\cdot 7$ with the parallel. The supposed satellite was as nearly as possible in the parallel of *b*, and rather farther than *b* from the planet. Thus its position with respect to *b* and the planet was very well defined.

On the morning of July 9, Mr. Lassell again set his telescope on the planet, which now was very nearly in a line with *a* and *b*, though nearer *b*; but he could see no trace of *c*. The atmosphere was not quite so favourable as on the preceding occasion, but his impression

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* Sudden and lawless changes in azimuth forbid independent determinations of the azimuthal deviation (which are also the best), viz. from the consecutive semidiurnal transits of circumpolar stars. The possessor of an imperfectly mounted instrument must content himself with assuming the fundamental places of his close circumpolar stars, and determine his azimuthal error from each of them. This will, with proper caution, be found quite sufficient for objects not too near the pole, especially when the clock-error stars are pretty numerous, and situated above and below the object to be determined.

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is, that *c* would have been visible if in its old place. Taking this observation in combination with those made previously by Mr. Lassell, the probability of a satellite is assuredly very considerable; and a few clear nights will settle the question.

Mr. Lassell intends to postpone any scrutiny of the ring until the planet can be observed at a greater elevation.

ERRATA.

Monthly Notice for January 1847.

No. 11, p. 190, *for* line 21 and several following, *substitute* these:—

The greatest possible values of K, *k*, and *k'*, are about 195. Let

$$L = 210 - K,\quad l = 210 - k,\quad l' = 210 - k'$$

then substituting these values in the last equations, the corrections are,

$$\text{In R.A.} \quad = Ee + Ff + Gg + Hh + L + l - 300^{s}{\cdot}00$$

$$\text{In N.P.D.} = Ee' + Ff' + Gg' + Hh' + L + l' - 300''{\cdot}00$$

in which every symbol is necessarily positive.

Monthly Notice for April 1847.

No. 14, p. 260, read "stretching from the east, past the mid-heaven."

P. 263 at the top, *for* 1836 *read* 1556.

Monthly Notice for May 1847.

No. 15, p. 271, in Rümker's Observations.

May 7	*for*	237° 5′ 23″	*read*	237° 3′ 23″
9	*for*	10 56 59	*read*	10 56 59·6
13	The declination doubtful.			

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